NASA Procedural Requirements

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Subject: NASA Science Management

Responsible Office: Science Mission Directorate

Chapter 1. Roles and Responsibilities

1.1 The NASA Chief Scientist

1.1.1 The NASA Chief Scientist, located within the Office of the Administrator, serves as the principal advisor to the NASA Administrator on science issues and as a prime interface to the national and international science community. The Chief Scientist chairs the NASA Science Council to ensure that NASA research programs are scientifically and technologically well founded, are of excellent quality, are appropriate for their intended applications, and are capturing, validating, and communicating benefits of NASA research to the public.

1.1.2 The Office of the Chief Scientist includes the following responsibilities:

a. Concurs on strategies and plans for research directions for NASA.
b. Develops NASA's science policy, procedural requirements, and research misconduct policy and procedures.
c. Provides oversight of science management and facilitates implementation of the White House Office of Science and Technology Policy and Office of Management and Budget (OMB) investment criteria of relevance, quality, and performance to ensure that NASA funds the most exemplary and meritorious science and research programs and projects to enable NASA to achieve its missions.
d. Maintains and fosters communication links with the scientific and broader research community at large including, but not limited to, other governmental agency, academic, industrial, and international partners.
e. Acts to encourage cooperation and synergy among the science and research programs other NASA programs.
f. Validates and communicates benefits of NASA research to the public.
g. Serves as a representative for NASA's civil service scientific and research community, as necessary, for such activities as functional and workforce planning; advocates for a high-quality internal R&D capability and civil service personnel knowledgeable of the forefront of scientific research.
h. Advises on science core competencies required by NASA.

1.2 Scientists at NASA Headquarters, NASA Centers, and the Jet Propulsion Laboratory

To fill NASA's needs for science guidance and oversight, NASA shall support a civil service scientific staff responsible for the following tasks:

1.2.1 Program Scientists at NASA Headquarters

NASA Program Scientists manage the science content of programs and projects at the mission or theme level to ensure continuity, complementarity, and comprehensiveness in all activities relating to a particular science mission or theme. They lead the solicitation and selection process for NASA-funded research at NASA Centers, the Jet

Propulsion Laboratory, universities, other government agencies, and private and non-profit institutions. They support cross-Mission Directorate activities and serve as a resource in disciplinary areas for Mission Directorate and NASA-wide activities. They work with other domestic and international agencies to assure effective integration between NASA programs and those of our counterparts. The Program Scientists guide the scientific and research program and project planning process and ensure that proposed instruments and data acquisition and analysis techniques are appropriate and will deliver the intended product to the appropriate users or archive. The Program Scientists participate in program performance evaluations, provide the MDAA's feedback on the effectiveness of the programs, and recommend improvements. They integrate space missions with relevant laboratory, sub-orbital, and computational science. Program Scientists are located at NASA Headquarters unless a program is managed at a NASA Center. They are also referred to as Mission Directorate Scientists.

1.2.2 Project Scientists and Deputy Project Scientists at NASA Centers

The Project Scientist has the primary responsibility of working with the Principal Investigator and Project Manager to ensure that the science requirements are defined and met. They also help to coordinate research activities with those of the national and international partners. Deputy Project Scientists assist with the various duties of the Project Scientist. The Project Scientist and Deputy Project Scientist are expected to maintain their scientific viability and scientific knowledge current within the scope of the mission/project. These scientists are located at NASA's Centers.

1.2.3 Scientists Working on Peer-Reviewed Basic Scientific Research

This category of scientist works on program-related tasks such as helping NASA Headquarters Program Scientists develop new missions and mission lines, mission science operations, data systems and software development, data analysis algorithms, modeling and data assimilation techniques, and mission hardware development. Some of these scientists may also perform the role of Project Scientist. Concomitantly, these scientists shall perform high-quality research subject to and corroborated by peer review that contributes to NASA strategic goals and ensures the capabilities of these scientists to make highly credible contributions in the evaluation, formation, and evolution of NASA programs. In addition, their research may provide the impetus for new, innovative, and groundbreaking scientific disciplines such as astrobiology. These scientists, in general, compete for grants and contracts with their university counterparts and provide a working-level link between NASA and the scientific community. These scientists are located at NASA's Centers.

1.2.4 Other Scientists Working, e.g., on Space Flight Hardware or Theory Related to Missions

This category of scientist provides in-house expertise to essential, NASA-unique tasks. These scientists develop an expertise via research and analysis specific to NASA-unique tasks that cannot be readily obtained elsewhere. They may serve as a resource for industry and academia in areas specific to their fields. This science role is complementary to the Project Scientist role. One aspect of this job may be to provide the theoretical and technical basis for the development of new capabilities or missions. This may be done, for example, via observing systems simulation or analyses of observations from predecessor missions or instruments for the purposes of indicating what additional capabilities are required or possible to achieve present or future scientific requirements or goals. Such work may also involve analyses that show the basis for continuing a historical data record across generations of instruments and experiments. Additionally, these scientists may also be responsible for developing the theoretical and practical techniques for the validation of data (ground truth), algorithm development, and modeling/data assimilation or may provide expertise in specific, required NASA-related technologies such as optics and laser materials, or those requisite for microwave and optical observing systems and information processing and analysis capabilities. These scientists are located at NASA's Centers.

1.3 Mission Directorate Associate Administrators

The Mission Directorate Associate Administrators (MDAA) are the leaders of NASA's Mission Directorates. Their specific roles are described in NPD 1000.3, The NASA Organization, and NPR 1000.2, NASA Strategic Management Handbook.

1.4 Principal Investigators

Principal Investigators are scientists external or internal to NASA who have received funding to perform specific research tasks. They are selected using the procedures described in Chapter 2 of this document, Sections 2.3 and 2.4. Their role is to conduct research and to publish their results in refereed journals or to develop and deliver other products (such as innovative and enabling technology, algorithms, software, or recommended operational procedures) as specified in their NASA funding instrument. They may provide findings to NASA by participating in Advisory Committees (see NPD 1000.3, The NASA Organization, Section 6.2, Federal Advisory Committee Act (FACA) Committees) and by participating in peer review panels.

1.5 The NASA Science Council

The NASA Science Council provides advice, counsel, and recommendations for consideration by the Administrator and other management forums on all aspects of science related to NASA's flight and ground programs. The NASA Science Council reports to the Administrator through the Chief Scientist. At a minimum, members of the Science Council shall include MDAAs (or their designees who have a responsibility for flight and ground programs), the Assistant Administrators for the Offices of External Relations and Human Capital Management, and the Chief Education Officer. The NASA Science Council Charter is contained in NPD 1000.3, The NASA Organization, Section 6.11, and provides additional information about the purposes of the NASA Science Council, its membership, and their roles and responsibilities.

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